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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,275	12/18/2001	Walter Takeo Yagyu	08200.608	9120
75	90 04/02/2003			
Liniak, Berenato, Longacre & White Ste. 240 6550 Rock Spring Drive			EXAMINER	
			FERGUSON, MICHAEL P	
Bethesda, MD 20817			ART UNIT	PAPER NUMBER
			3679	
			DATE MAILED: 04/02/2003	

Please find below and/or attached an Office communication concerning this application or proceeding.

			<u> </u>				
		Application No.	Applicant(s)				
Office Action Summary		10/020,275	YAGYU, WALTER TAKEO				
	Onice Action Summary	Examiner	Art Unit				
	The MAU ING DATE of this communication and	Michael P. Ferguson	3679				
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply							
THE - Exte after - If the - If NO - Failu - Any	ORTENED STATUTORY PERIOD FOR REPLY MAILING DATE OF THIS COMMUNICATION. nsions of time may be available under the provisions of 37 CFR 1.13 SIX (6) MONTHS from the mailing date of this communication. e period for reply specified above is less than thirty (30) days, a reply period for reply is specified above, the maximum statutory period were to reply within the set or extended period for reply will, by statute, reply received by the Office later than three months after the mailing and patent term adjustment. See 37 CFR 1.704(b).	36(a). In no event, however, may a reply be ting within the statutory minimum of thirty (30) day will apply and will expire SIX (6) MONTHS from cause the application to become ABANDONE	mely filed  ys will be considered timely. In the mailing date of this communication.  ED (35 U.S.C. § 133).				
1)	Responsive to communication(s) filed on	•					
2a)□		s action is non-final.					
3)	3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.						
· _	ion of Claims						
•	Claim(s) 1-3 is/are pending in the application.						
	4a) Of the above claim(s) is/are withdraw	vn from consideration.					
·	☐ Claim(s) is/are allowed.						
. —	☐ Claim(s) <u>1-3</u> is/are rejected.						
7)∐							
8) Claim(s) are subject to restriction and/or election requirement.  Application Papers							
	The specification is objected to by the Examiner						
10)⊠ The drawing(s) filed on <u>18 December 2001</u> is/are: a)⊠ accepted or b)□ objected to by the Examiner.							
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).							
11)☐ The proposed drawing correction filed on is: a)☐ approved b)☐ disapproved by the Examiner.							
If approved, corrected drawings are required in reply to this Office action.							
12) The oath or declaration is objected to by the Examiner.							
Priority ι	ınder 35 U.S.C. §§ 119 and 120						
13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).							
a)	⊠ All b) ☐ Some * c) ☐ None of:						
	1. Certified copies of the priority documents						
	2. Certified copies of the priority documents have been received in Application No						
* 5	3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.						
	Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).						
_a	)  The translation of the foreign language protection.  Acknowledgment is made of a claim for domestic	visional application has been rec	ceived.				
Attachmen		, , , , , , , , , , , , , , , , , , , ,					
1) 🔀 Notic 2) 🔲 Notic	e of References Cited (PTO-892) e of Draftsperson's Patent Drawing Review (PTO-948) nation Disclosure Statement(s) (PTO-1449) Paper No(s)	5) Notice of Informal	y (PTO-413) Paper No(s) Patent Application (PTO-152)				

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#### **DETAILED ACTION**

## Claim Objections

1. Claims 1-3 are objected to because of the following informalities:

Claim 1 (line 1) recites "fibers reinforcement". It should recite --fiber reinforcement--.

Claim 1 (line 2) recites "ball joints composed". It should recite --ball joints each composed--.

Claim 1 (line 3) recites "said assembly". It should recite --said tie rod--.

Claim 1 (line 6) recites "fibers reinforcements". It should recite --fiber reinforcement--.

Claim 2 (line 1) recites "fibers reinforcement". It should recite --fiber reinforcement--.

Claim 2 (line 3) recites "assure the resistance required to the objective to which they are intended". It appears the applicant may have intended to recite --assures the resistance required to the objective to which the ball joints are intended--.

Claim 3 (line 1) recites "fibers reinforcement". It should recite --fiber reinforcement--.

Claim 3 (line 3) recites "in the body of the stem and in the ball joints boxes". It should recite --on the body of the stem and in the ball joints' boxes--.

Claim 3 (line 4) recites "the assembly". It should recite --the tie rod--.

Claim 3 (line 5) recites "provided in the threads of the stem". It should recite --provided on the thread of the stem--.

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### Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi (USPN 5,092,703).

As to claim 1, Kobayashi discloses a tie rod with application of polymer composite with fiber reinforcement, having a stem 1 provided at its ends with ball joints 2 each composed of a box 5, a bearing 4, a protection cover 9 and a ball pin 3, the tie rod having the function of fixing pieces and components of a mechanical system between themselves, providing to them angular and rotational movement, supporting the strains concentrated therein, wherein the stem of the tie rod is made of material comprising a polymer composite with fiber reinforcement and combined with components (ball pin 3) of a metallic material provided in the ball joints (ball pin 3 is provided within ball joint 2 and combined with stem 1; Figures 1-3, column 5 lines 20-31, column 7 lines 28-44).

## Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

<sup>(</sup>a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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5. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pazdirek et al. (USPN 6,398,446) in view of Kobayashi.

As to claim 1, Pazdirek et al. discloses a tie rod having a stem 22 provided at its ends with ball joints 16 each composed of a box 14, a bearing 36, a protection cover 20 and a ball pin 30, the tie rod having the function of fixing pieces and components of a mechanical system between themselves, providing to them angular and rotational movement, supporting the strains concentrated therein, wherein the stem of the tie rod is made of material comprising a composite and combined with components (ball pin 30) of a metallic material provided in the ball joints (ball pin 30 is provided within ball joint 16 and combined with stem 22; Figure 9, column 4 lines 5-21 and 41-46).

Pazdirek et al. fails to disclose a tie rod wherein a stem of the tie rod is made of material comprising a polymer composite with fiber reinforcement.

Kobayashi teaches a tie rod with application of polymer composite with fiber reinforcement, having a stem 1 provided at its ends with ball joints 2 each composed of a box 5, a bearing 4, a protection cover 9 and a ball pin 3, the tie rod having the function of fixing pieces and components of a mechanical system between themselves, providing to them angular and rotational movement, supporting the strains concentrated therein, wherein the stem of the tie rod is made of material comprising a polymer composite with fiber reinforcement and combined with components (ball pin 3) of a metallic material provided in the ball joints; the fiber reinforced polymer composite being corrosion resistant and providing improved strength and decreased weight at a suitable manufacturing cost (Figures 1-3, column 5 lines 20-31, column 7 lines 28-41).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a tie rod as disclosed by Pazdirek to have a stem made of a polymer composite with fiber reinforcement as taught by Kobayashi to provide for a corrosion resistant, light weight tie rod, the fiber reinforcement providing improved strength.

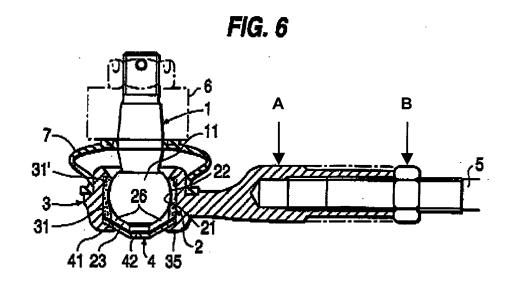
As to claim 2, Pazdirek et al. discloses a tie rod wherein ball joints **16** are attached to the ends of a stem **22** by chemical fixing (adhesive), making the tie rod a tie rod with fixed length (column 4 lines 41-46).

The applicant is reminded that process limitations are given no patentable weight in product claims. See MPEP § 2113. "The patentability of a product does not depend on its method of production. " In re Thorpe, 777 F.2d 695,698,USPQ 964,966 (Fed.Cir.1985).

6. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (USPN 5,368,408) in view of Kobayashi.

As to claim 1, Shimizu et al. discloses a tie rod with application of polymer composite with fiber reinforcement, having a stem 5 provided at its ends with ball joints 3 each composed of a box A (Figure 6 reprinted below with annotations), a bearing 2, a protection cover 7 and a ball pin 1, the tie rod having the function of fixing pieces and components of a mechanical system between themselves, providing to them angular and rotational movement, supporting the strains concentrated therein, wherein the stem of the tie rod is combined with components of a metallic material provided in the ball joints (box A of ball joint 3 has a metallic cross-hatching; Figure 6).

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Shimizu et al. fails to disclose a tie rod wherein a stem of the tie rod is made of material comprising a polymer composite with fiber reinforcement.

Kobayashi teaches a tie rod with application of polymer composite with fiber reinforcement, having a stem 1 provided at its ends with ball joints 2 each composed of a box 5, a bearing 4, a protection cover 9 and a ball pin 3, the tie rod having the function of fixing pieces and components of a mechanical system between themselves, providing to them angular and rotational movement, supporting the strains concentrated therein, wherein the stem of the tie rod is made of material comprising a polymer composite with fiber reinforcement and combined with components (ball pin 3) of a metallic material provided in the ball joints; the fiber reinforced polymer composite being corrosion resistant and providing improved strength and decreased weight at a suitable manufacturing cost (Figures 1-3, column 5 lines 20-31, column 7 lines 28-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a tie rod as disclosed by Pazdirek to have a stem made of a polymer composite with fiber reinforcement as taught by Kobayashi to provide for a

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corrosion resistant, light weight tie rod, the fiber reinforcement providing improved strength.

As to claim 3, Shimizu et al. discloses a tie rod wherein ball joints 3 are attached to the ends of a stem 5 by means of a thread on the body of the stem and in the ball joints' boxes **A**, making the tie rod a tie rod with variable length, the adjustment of its length and the locking of the tie rod being provided by nuts **B** provided on the threads of the stem and that are tightened against the boxes of the ball joints (Figure 6).

#### Conclusion

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. The following patents are cited to be added to the applicant's list for they further show the state of the art with respect to tie rod assemblies:

Mattila (USPN 5,529,316) is cited for pertaining to adjustable length tie rods.

Gleason, II (USPN 6,161,451) and Pazdirek et al. (USPN 6,505,989) are cited for pertaining to tie rods having a stem made of a fiber reinforced polymer composite.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Ferguson whose telephone number is (703)308-8591. The examiner can normally be reached on M-F (7:30-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on (703)308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9326 for regular communications and (703)872-9327 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1114.

MPF March 25, 2003

> Lynne H. Browne Supervisory Patent Examiner Group Art Unit 3679

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